

Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

03/19/19

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____

2. Date submitted: _____

3. Date approved: Fall 1997 Date revised 05/06/25

4. Department/discipline: Mathematics

5. Department(s) endorsement(s): _____
(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Calculus: Short Course
Abbreviated course title for Transcripts (25 characters or less): _____

7. Course Designator: MATH 8. Course Level: 1020

9. Number of Credits: Lecture 3 Lab _____

10. Control Number (on site) 35 Control Number (online) _____

11. Catalog/Course description:

A brief survey of calculus in which students will review real numbers, graphing, and functions. Core material includes limits, continuity, differentiation and integration. Applications of differentiation include minimizing/maximizing cost, profit, and revenue functions. Students will learn applications of the integral with respect to the physical, social, and behavioral sciences and use exponential and logarithmic functions to explore growth, decay, and population models. Students planning to enroll in more than one semester of calculus should begin with MATH 2001.

12. Course prerequisite(s) or co-requisite(s):

Prerequisite(s): MATH 1010 College Algebra, placement by Multiple Measures or instructor consent

Co-requisite:

13. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

1) Textbook: Suitable textbooks are usually titled. *Calculus: A Short Course or Calculus for Social Science, Biological Sciences, and Business*. Calculus with polynomials, exponential, and logarithmic functions is featured, but trigonometry is usually omitted.

2) Graphing Calculator

14. **Course Content** (Provide an outline of major topics covered in course)

1. Review of algebra.
2. Introduction to limits and differentiation.
3. Applications of differentiation.
4. Fundamental theorem of calculus.

5. Integration techniques.
6. Exponential and logarithmic functions.
7. Applications of integration.
8. Introduction to multivariable calculus.

15. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information.)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Upon completion of this course, the student will be able to:

Learning Outcomes	Competencies (CAC)	Cultural Standards
1. Calculate limits of a variety of functions.	C	
2. Solve applications that require differentiation and integration.	C	1, 4, 5
3. Apply differentiation and integration techniques to a variety of functions.	C	
4. Analyze exponential and logarithmic functions.	C	

WINHEC Cultural Standards:

1. **GIKENDAASOWIN – *Knowing knowledge*:** To develop human beings who value knowledge, learning, and critical thinking and are able to effectively use the language, knowledge, and skills central to an Ojibwe-Anishinaabe way of knowing.
2. **GWAYAKWAADIZIWIN – *Living a balanced way*:** To develop balanced human beings who are reflective, informed learners who understand the interrelatedness of human society and the natural environment, recognize the importance of living in harmony with creation, and are able to apply a systems approach to understanding and deciding on a course of action.
3. **ZOONGIDE'EWIN – *Strong hearted*:** To increase the students' capacity to live and walk with a strong heart, humble and open to new ideas and courageous enough to confront the accepted truths of history and society.
4. **AANGWAAMIZIWIN – *Diligence and caution*:** To develop students' capacity to proceed carefully, after identifying, discussing, and reflecting on the logical and ethical dimensions of political, social, and personal life.

5. **DEBWEWIN – *Honesty and integrity*:** To increase students' capacity to think and act with honesty and integrity as they understand and face the realities of increasingly interdependent nations and people.
6. **ZAAGI' IDIWIN – *Loving and Caring*:** To encourage students' acceptance of the diversity within their school, community, and environment by developing healthy, caring relationships built on respect for all.
7. **ZHAWENINDIWIN – *Compassion*:** To expand students' knowledge of the human condition and human cultures and the importance of compassion especially in relation to behavior, ideas, and values expressed in the works of human imagination and thought.
16. **Minnesota Transfer Curriculum (MnTC):** List which goal area(s) – up to two – this course fulfills.

See www.mntransfer.org

Goal Area(s): _____

Provide the specific learning outcomes as listed on the mntransfer.org website that pertain to this course.

17. Are there any additional licensing/certification requirements involved?

_____ Yes ☒ No

Provide the required documentation to show course meets required licensing/certification standards.

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